

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA2004/001009

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N7/00 C12N5/06 C12Q1/70 A61K39/29 G01N33/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C12Q A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MUELLER HUBERT M ET AL: "Peripheral blood leukocytes serve as a possible extrahepatic site for hepatitis C virus replication" JOURNAL OF GENERAL VIROLOGY, vol. 74, no. 4, 1993, pages 669-676, XP009022599 ISSN: 0022-1317 page 675	1-7,13
A	the whole document ----- -/--	8-12, 14-21

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

26 January 2005

Date of mailing of the international search report

04/02/2005

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MUELLER H M ET AL: "B-lymphocytes are predominantly involved in viral propagation of hepatitis C virus (HCV)" ARCHIVES OF VIROLOGY, NEW YORK, NY, US, no. SUPPL 9, 1994, pages 307-316, XP009022615 ISSN: 0304-8608 the whole document	1-21
A	LASKUS TOMASZ ET AL: "The presence of active hepatitis C virus replication in lymphoid tissue in patients coinfectd with human immunodeficiency virus type 1" JOURNAL OF INFECTIOUS DISEASES, vol. 178, no. 4, October 1998 (1998-10), pages 1189-1192, XP008041838 ISSN: 0022-1899 page 1191 the whole document	1-21
A	CRIBIER BERNARD ET AL: "In vitro infection of peripheral blood mononuclear cells by hepatitis C virus" JOURNAL OF GENERAL VIROLOGY, vol. 76, no. 10, 1995, pages 2485-2491, XP009022598 ISSN: 0022-1317 the whole document	1-21
A	US 5 716 845 A (SUGDEN ET AL) 10 February 1998 (1998-02-10) the whole document	1-21
P,X	WO 2004/013318 A (UNIV MCGILL ; SONENBERG NAHUM (CA); LOPEZ-LASTRA MARCELO (CA)) 12 February 2004 (2004-02-12) the whole document	1-21
T	LIU C: "624 Culture and immortalization of hepatitis C viral positive human hepatocytes" HEPATOLOGY, WILLIAMS AND WILKINS, BALTIMORE, MD, US, vol. 38, 2003, page 462, XP004623839 ISSN: 0270-9139 the whole document	1-21
T	CABRERA R ET AL: "626 CD4<+> CD25<+> regulatory T lymphocytes respond directly to HCV antigens via cytokine release and suppress HCV-specific T cell responses" HEPATOLOGY, WILLIAMS AND WILKINS, BALTIMORE, MD, US, vol. 38, 2003, pages 462-463, XP004623841 ISSN: 0270-9139	1-21

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: -

Present claims 14 - 17 relate to an extremely large number of possible in vitro replication systems, comprising any EBV-transformed B cell capable of replicating complete and infectious HCV as well as any second cell population having HCV tropism and in which robust HCV replication was possible; present claims 18 - 19 further refer to an assay of screening a test agent making use of such a replication system testing any biological function of the HCV produced from the cell line or cell population and present claims 20 - 21 relate to a method for identifying a compound with anti-HCV activity from a library of compounds based on said screening assay. Support within the meaning of Art. 6 PCT and/or disclosure within the meaning of Art. 5 PCT is to be found, however, for only a very small proportion of the compounds and methods claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to Example XXI, disclosing a co-culture system comprising an EBV-immortalized cell line derived from an HCV positive donor and PBLs from an HCV negative donor (Fig. 43).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA2004/001009

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5716845	A	10-02-1998	JP	8168382 A	02-07-1996
WO 2004013318	A	12-02-2004	WO	2004013318 A1	12-02-2004